to a particular customer group." Sprint Comments at 45.[21] But the rules that GTE proposes to account for differences in geographic markets -- wire centers with 15,000 or more lines for transport and customers with 20 or more lines for loops -- are not based on the kinds of customers served by these elements but on the size of the area or customers served on competitive terms by substitutes. Nothing in the Act precludes the Commission from drawing these common sense distinctions. Moreover, as the Supreme Court confirmed, section 251(c)(3) does not place an independent duty on ILECs to provide unbundled access to every item that meets the definition of network element. Rather, section 251(c)(3) only "indicates where unbundled access must occur, not which [network] elements must be unbundled." *Iowa Utils. Bd.*, 119 S. Ct. at 736. Section 251(d)(2)'s "necessary" and "impair" standards do that job, and if the Commission concludes that elements serving business customers or customers of a certain size do not meet these standards, then the Act precludes such elements from being unbundled.

D. Access To a "Proprietary" Feature, Function or Capability of a Network Element Should Be "Necessary" Under Section 251(d)(2)(A) Only Where the Proprietary Feature, Function or Capability Is Integral To the Operation of the Element Such That CLECs Cannot Make Use of the Element Without Such Access.

Numerous commenters, including the Big Three, argue that the difference between the "necessary" and "impair" tests "ultimately is one of degree." AT&T Comments at 55; *see also*, *e.g.*, MCI WorldCom Comments at 16 ("Congress established a higher threshold for access to proprietary elements than for nonproprietary elements, contrasting the necessary standard for the

[21] *See also* Qwest Comments at 47 ("[T]he Act does not permit class-of-service limitations on network elements.").

former with the impairment standard for the latter."). But this interpretation of "necessary" is not consistent with the most reasonable reading of section 251(d)(2) or with the fact, as recognized by MCI WorldCom, that "[f]ew elements are proprietary or have proprietary aspects." MCI WorldCom Comments at 20. The most reasonable interpretation of section 251(d)(2) must recognize that the "necessary" test should apply to proprietary features, functions or capabilities of network elements, which are themselves defined to be "network elements" under the Act. *See* 47 U.S.C. § 153(29). If the proprietary feature or functionality is not integral to the operation of the element of which it is a part -- if a CLEC can make use of the element without access to the proprietary feature or functionality -- then ILECs should not be required to provide access to that aspect of the element. If, on the other hand, the proprietary portion is integral to the operation of an element that otherwise satisfies the "impair" test such that the element cannot be used without the proprietary feature, function or capability, then access to it is "necessary" and must be provided. This interpretation of section 251(d)(2) is supported by the Competitive Telecommunications Association, which states that access "to a network element that has a proprietary component is necessary if a material loss in the functionality of the network element would result without access to its proprietary characteristic and if the requesting carrier's ability to provide the intended service would otherwise be impaired." Competitive Telecommunications Ass'n Comments at 17 (emphasis omitted).

GTE's interpretation of section 251(d)(2)'s "necessary" test will ensure that investment expectations in intellectual property are not defeated when there is no need to afford CLECs access to proprietary protocols. Other commenters have proposed two limitations on the scope

of the "necessary" test that would undermine this purpose without producing any countervailing competitive benefits. *First*, AT&T and others assert that the protections of section 251(d)(2)'s "necessary" test should extend only to ILEC proprietary protocols and not such protocols owned and licensed by third parties. AT&T Comments at 54-55. But it is vital for the Commission to guarantee that telecommunications equipment vendors -- who, in MCI WorldCom's words, are responsible for "most of the innovation and high-risk investment that takes place in the telecommunications industry," MCI WorldCom Comments at 9 -- continue to have strong incentives to innovate. If proprietary protocols belonging to these vendors become public property once licensed to a single ILEC, these drivers of competition will lose their incentive to develop new products.

Second, ATLS and others assert that "if unbundling merely will give a requesting carrier the benefit of a proprietary methodology, but does not disclose the methodology, the network element is not 'proprietary' for the purposes of Section 251(d)(2)." ALTS Comments at 16. But much of the return on investment for intellectual property comes from the right to limit the number of parties to whom it is licensed. Although the risk to incentives is lessened if users of the protocol are not able to copy it, requiring ILECs and third-party vendors to make proprietary protocols available to all comers is fundamentally at odds with the protections that state and federal law afford intellectual property and trade secrets. To assure that all parties in the telecommunications industry continue to have strong incentives to innovate, the Commission should therefore extend the protections of the "necessary" test to *all* proprietary aspects of ILEC

elements, regardless of the source or the extent of the disclosure inherent in unbundled use of the elements.

II. THE REAL-WORLD ACTIONS OF CLECs CONFIRM THAT SWITCHING, OPERATOR SERVICES AND DIRECTORY ASSISTANCE, AND SIGNALING, SHOULD NOT BE SUBJECT TO UNBUNDLING.

A. Hundreds of CLECs Currently Self-Supply Their Own Switching in Markets Across the Nation. Switching Therefore Does Not Meet Section 251(d)(2)'s "Impair" Test.

Although the Big Three attempt to minimize the scope of CLEC switch deployment over the past three years, actual marketplace facts confirm that CLECs are able to self-provide their own switching in every kind of market. As of March of 1999, CLECs had deployed a total of 724 switches, with *167 different CLECs* placing switches in *320 different cities.* UNE Fact Report at I-1. PNR's survey of eight typical GTE markets confirms that *every* facilities-based CLEC operating in those areas -- including Mark Twain Communications operating in GTE's rural Missouri territory -- self-provides its own switching. PNR Report at 23. In these eight markets alone, facilities-based CLECs have deployed 130 of their own switches. *Id.* at 10.

It is therefore not surprising that ALTS -- the organization representing CLECs that have the most to lose if facilities-based competitors are disadvantaged by the Commission's unbundling rules -- agrees that switching should not be subject to an unbundling obligation. ALTS Comments at ii (omitting switching from the list of elements ALTS believes should be unbundled). This conclusion is echoed by the comments of individual facilities-based CLECs. Cox Communications -- which has "invested over $4 billion in venture capital over the past six years" in building its own local facilities -- counsels the Commission that "the current broad

availability of UNEs and the Commission's pricing methodology actually jeopardize the development of facilities-based competition." Cox Comments at 2, 12. Because overbroad unbundling rules "provide significant incentives for new entrants to obtain UNEs from the ILECs rather than considering deployment of competitive facilities," Cox argues for unbundling only a limited number of elements that *does not* include switching. *Id.* at 11-12.

Similarly, Focal Communications -- a facilities-based CLEC that has invested roughly $200 million in local networks that include self-provided switching -- concludes that "requiring switch-based CLECs to compete with unbundled ILEC switching would be completely inconsistent with the Act's goal of encouraging facilities-based competition." Focal Comments at 2. Based on its own experience as a "start-up company with almost no business three years ago," Focal counsels the Commission that CLECs face no "significant obstacles to . . . raising the capital to purchase switches." *Id.* at 5.

Likewise, the Ohio PUC, which has conducted an intensive factual review of the alternatives to ILEC switching available in Ohio, concludes that CLECs should not be able to secure unbundled access to ILEC switching. This conclusion is based on the fact -- confirmed by GTE's own experience in the eight representative markets studied by PNR -- that numerous CLECs are self-providing switching, that CLECs are able to "serve multiple exchanges, even multiple counties with a single switch," and that "switch vendors are attempting to capitalize on the CLEC switch market by offering smaller scalable switches with significantly lower costs and attractive financing options." Ohio PUC comments at 7-8.

AT&T nevertheless contends that CLECs have deployed "only a tiny fraction of the switches that the incumbent LECs have deployed" -- a gap that purportedly reflects "the enormous size of the investment and the long lead times needed to deploy" switches and "the fact that switch-based entry is not an economically viable means to compete for most new customers, especially residential and smaller business customers." AT&T Comments at 89. According to AT&T, CLECs have installed "fewer than 600 switches, and those switches are located largely in selected urban areas with a high concentration of businesses." *Id.* at 91. But the differential in the number of CLEC and ILEC switches generally is a function of ILEC universal service and carrier of last resort obligations. In GTE's case, rural and non-contiguous service areas in many states set a precedent for the existing network design, a history that CLECs have no need to replicate when they enter the market area.

Moreover, as even MCI WorldCom concedes, "CLECs are employing forward-looking networks that, given such advances as fiber technology, will require far fewer switches." MCI WorldCom Comments at 39. Indeed, MCI WorldCom estimated that, "based on the latest technology options, the number of switches required to serve the entire country [i]s 4,200 (or only 22% of the current number of total switches)." Reply Declaration of Francis J. Murphy at 7 (citation omitted) ("Murphy Reply Declaration") (filed herewith as Appendix B). This conclusion is echoed by the California PUC, which states that CLECs "have found it advantageous to have their switches serve a much larger geographic area than LEC switches, and most competitors in California have configured their networks to take advantage of those economies." California PUC Comments at 4. Thus, CLECs like ITC Deltacom are using

switches to serve markets as far as 190 miles away -- a distance that can be expanded up to 650 miles by attaching a remote switch to the CLEC's main switch. UNE Fact Report at I-23. Likewise, Genesis Communications International, which targets ethnic markets, serves customers in California, Oregon, Arizona, and Nevada with a switch placed in Los Angeles. It is also planning to deploy a new switch in Dallas that will serve customers in Texas, Colorado, and New Mexico.[22] AT&T's apples-to-oranges comparison between the number of CLEC and ILEC switches therefore says nothing about the ability of CLECs to compete successfully using self-provided switching.

Despite the fact that CLECs have had extraordinary success competing in the marketplace using their own switches, the Big Three identify a number of costs CLECs must bear when self-supplying switching. As a preliminary matter, it bears repeating that the Commission should not base its "impair" determination solely on a cost comparison between CLEC self-provisioning and purchasing unbundled switching from the ILEC. As Professor Kahn explains, such an analysis must take into account *all* the factors relevant to determining whether a firm can remain competitive in the marketplace, including the competitive advantages facilities-based CLECs have -- including efficiencies stemming from newer network equipment and economies of scope derived from CLECs' ability to offer bundled services -- and the competitive disadvantages ILECs face, including diseconomies of scale stemming from obligations to serve all customers in a given territory. *See* Kahn Reply Declaration at 3; Kahn Declaration at 12. Only if this

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[22] *Competitive Local Entry -- CLEC*, TRInsight, June 8, 1999 edition.

complete picture establishes that, *on balance*, CLECs are unable to compete effectively without access to an ILEC element would section 251(d)(2)'s "impair" test be satisfied. The best evidence about the ability of CLECs to compete comes from CLECs' own marketplace behavior, and the marketplace evidence clearly establishes that CLECs are able to compete effectively using their own switching -- whatever additional costs they bear. This fact is proven by AT&T and MCI WorldCom's own experience operating in the eight GTE markets surveyed by PNR. Collectively, the two carriers have deployed 12 switches in just three of these eight markets -- a substantial investment they surely would not have made if CLECs operating their own switches suffer significant cost disadvantages relative to ILECs. PNR Report at 30, 72.

Even taking the Big Three's claims individually, it is clear that CLECs self-providing switching actually operate at a cost *advantage*, not disadvantage, relative to ILECs. *First*, AT&T asserts that CLECs self-providing switching must bear the "inefficiency that would result from having to design and build a network before knowing who the customers are and what their traffic patterns require." AT&T Comments at 94. CLEC design decisions, according to AT&T, are based on "little more than guesswork about the location and calling patterns of those customers they are able to win from the incumbent." *Id.* at 97. This claim is patently ridiculous. Facilities-based CLECs, some with market capitalizations exceeding $2 billion, have both the resources and the expertise to plan efficient networks. Indeed, the Big Three and 164 other CLECs have deployed their own switches -- few, if any, were placed based on "little more than guesswork." UNE Fact Report at I-1.

Second, AT&T asserts that CLECs cannot economically self-provide switching to provide "mass market services that otherwise depend on elements obtained from LECs." AT&T Comments at 16. But there is no such thing as a "business switch" or a "residential switch." Switches, once deployed, are capable of serving any kind of customer. Thus, numerous competitors are using self-provided switches to serve residential customers. Many CLECs -- including Cox Communications, Teligent, and WinStar -- are using self-provided switching to supply local service to residential customers located in MDUs. Moreover, in GTE's rural Missouri, Iowa, and South Carolina territories studied by PNR, CLECs are using self-provided switches to serve "all residential and business customers," including single-family residences. PNR Report at 65, 67. Thus, as the following table indicates, CLECs are using their own switches to serve residential and business customers even in the smallest suburban and rural markets.

LOCATION	CLEC	MARKET TYPE	POPULATION (1990)
Oviedo, FL	Intermedia	suburban	11,114
Delmar, IA	Farmers & Bus. Tel.	rural	517
Oxford Junct, IA	Lost Nation-Elwood	rural	581
Mackay, ID	Westel	rural	574
Paducah, KY	ALEC	suburban	27,256
Gonzalez, LA	Advanced Tel.	suburban	7,003
Fergus Falls, MN	Otter Tail Telecom.	suburban	12,362
Noborne, MO	Green Hills Telecom.	rural	856
Bloomsburg, PA	Commonwealth	suburban	12,439

Murphy Reply Declaration at 4. There is nothing special about these markets. CLECs have therefore proven themselves quite capable of serving even the smallest customers in every kind of area using self-supplied switching.

Nevertheless, MCI WorldCom echoes AT&T's claim that CLEC switches cannot be used to serve residential customers, stating that it has chosen to use unbundled switching to provide mass market service in New York even though it has its own switches in place. MCI WorldCom Comments at 53. Rather than demonstrating that switching should not be unbundled, however, this claim demonstrates unequivocally that affording CLECs access to a UNE Platform that includes switching at TELRIC prices destroys incentives to self-provide facilities. MCI WorldCom is offering this mass market service in New York through a UNE Platform made available by Bell Atlantic. While numerous other CLECs are targeting residential MDU customers in New York using their own switching, MCI WorldCom found it advantageous to exploit arbitrage opportunities by relying on the UNE Platform. Thus, notwithstanding the Big Three's claims that the Platform's availability will spur deployment of facilities, MCI WorldCom's limited experience in New York proves that just the opposite is true.

Third, the Big Three argue that it takes "an average of nine to twelve months" to deploy a new switch, while, if CLECs were afforded access to the UNE platform, they "could begin competing for a large portion of all customers immediately." AT&T Comments at 91-92; *see also* MCI WorldCom Comments at 54. But CLECs already have switches in place that can serve almost the entire United States, and new switches marketed to CLECs by equipment

manufacturers can be deployed very quickly. NECI Report at 20 & Attachment D. Lucent, for example, has developed "prefab central offices" specifically to reduce installation time for CLECs -- "the entire process, from prefab to deployment of service takes 40 days." UNE Fact Report at I-30 (citation omitted). Even assuming that AT&T's estimate is accurate, the Commission should not expect that facilities will be deployed in every market in the country overnight. It would slow the pace of competition far more if the Commission adopted a rule -- like the UNE Platform requirement proposed by the Big Three -- that allowed *competitors* to enter markets instantaneously but destroyed the prospects that *competition* could develop over the long term.

Fourth, the Big Three argue that CLECs that are self-providing switching must bear the cost of establishing collocation in ILEC central offices and purchasing the equipment required to "aggregate their traffic and extend the ILEC's loops to the CLEC's switch using interoffice transport capabilities." AT&T Comments at 86; *see also* MCI WorldCom Comments at 51. But with respect to collocation, the recent *Advanced Services Order* was designed, in the Commission's words, to "reduce the costs and delays faced by competitors that seek to collocate equipment in an incumbent LEC's central office."[23] This order increases significantly the options available to CLECs seeking collocation, guaranteeing CLECs access to "shared cage and cageless collocation arrangements" and requiring ILECs to "permit collocation in adjacent

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[23] *In re Deployment of Wireline Services Offering Advanced Telecommunications Capability*, First Report and Order and Further Notice of Proposed Rulemaking, CC Docket No. 98-147, at ¶ 6 (rel. Mar. 31, 1999) ("*Advanced Services Order*").

controlled environmental vaults" when "space is exhausted at a particular LEC location." *Advanced Services Order* ¶ 6. The *Advanced Services Order* also allows CLECs to collocate all equipment used to facilitate "interconnection and/or access to unbundled network elements," affords CLECs to tour central offices in which they have been denied collocation, and requires ILECs to make room in central offices by removing "obsolete, unused equipment." *Id.* ¶ 8. Moreover, the Commission found that GTE and other ILECs "respond to physical collocation requests within ten days" -- a "reasonable time" in the Commission's estimation -- and that state commissions are "ensur[ing] that collocation is provisioned in a timely manner." *Id.* ¶ 23. The fact that 167 CLECs have successfully deployed their own switches confirms that the need for collocation is not an impediment to self-provision. UNE Fact Report at I-1. To the extent that any problems with collocation have arisen, the *Advanced Services Order* confirms that these problems are best addressed directly -- rather than by making unbundled ILEC elements available unnecessarily and thereby disrupting competition.

Likewise, CLECs are not disadvantaged by the fact that they must "aggregate their traffic and extend the ILEC's loops to the CLEC's switch using interoffice transport capabilities." AT&T Comments at 86. CLECs are able to serve numerous ILEC rate centers with a single switch, which means that -- on the whole -- the cost of building and operating a CLEC network appears to be lower. And although CLECs must bear the cost of transporting traffic from ILEC central offices back to their switches, ILECs must bear an even higher cost associated with interconnecting a much larger number of switches. Thus, Rochester Telephone, a Frontier subsidiary, working with Lucent Technologies was able to consolidate its base of 24 class-five

switches and one class-four switch down to only six 5ESS-2000 switches. This 75 percent consolidation reduced Rochester's interoffice trunking requirements by 40 percent. Murphy Reply Declaration at 8. As WinStar states in its comments, it is "able to build highly efficient networks that provide state-of-the-art telecommunications services" and "is not subject to the economic inefficiencies or antiquated technology often associated with ILEC services." WinStar Comments at 3. The marketplace success of CLECs relying on their own switching confirms the accuracy of WinStar's assessment.

Fifth, the Big Three assert that "CLECs' ability to use their own switches to compete is severely restricted because of their dependence upon the manual 'coordinated hot-cut' process that incumbent LECs must perform to transfer each and every former incumbent LEC customer's loop to a CLEC switch." AT&T Comments at 86-87; *see also* MCI WorldCom Comments at 52. But these alleged difficulties have not stopped CLECs from using self-provided switching to serve high volumes of business and residential customers. Even AT&T argued in another Commission proceeding that the physical process of reconnecting a customer loop to a CLEC switch takes only one minute. *See* Murphy Reply Declaration at 16. Any additional delays associated with hot-cuts stem from the need for *both* ILECs and CLECs to coordinate their staffing and provisioning processes. GTE, for example, provides hot-cuts on demand to CLECs and schedules them to take place at a mutually agreeable time. *Id.* at 15. GTE performs these hot-cuts when scheduled unless -- as is often the case -- the CLEC asks for a delay. *Id.* at 15-16. This process of CLEC/ILEC coordination is working so well now that Allegiance Telecom -- which self-provides its own switching in each of the markets it serves --

tells "new customers that making [Allegiance their] local telecommunications provider is almost as easy and seamless as switching long distance carriers." *Id.* at 17 (citation omitted). In AT&T's own words, "in the long run a CLEC order for a UNE should be should be no more complex than the average [ILEC] order." *Id.* (citation omitted).

Nevertheless, the Big Three use the purported difficulties associated with the hot-cut process to push the UNE Platform, asserting that CLECs using the Platform could change customers to their service with "a software change that occurs almost instantaneously." AT&T Comments at 88; *see also* MCI WorldCom Comments at 52. But the Commission must determine the most effective means for guaranteeing facilities-based competition over the long term. Numerous CLECs are relying on their own switching -- and the manual hot-cut process -- to provide both business and residential service. These CLECs will be severely disadvantaged if companies like AT&T and MCI WorldCom -- who clearly have the capital, existing long distance customer bases, and brand recognition to compete with their own facilities -- are able to secure local customers by offering service over a UNE Platform priced at TELRIC. But the only way the hot-cut progress will continue to improve -- and perhaps result in an automated process for switching customer service -- is if competitors and third-party vendors have a continued incentive to develop better solutions. Affording CLECs access to the UNE Platform destroys this incentive by delaying, or eliminating altogether, the need to transition customers from the ILEC's network to self-provided CLEC switches. Ultimately, this can only make it much more difficult for facilities-based competition to flourish.

Sixth, AT&T asserts that the Commission should require ILECs to unbundle switching because CLECs cannot "take advantage of an incumbent LEC's shared transport element unless the CLEC can also obtain that incumbent LEC's unbundled switching element." AT&T Comments at 99. The Supreme Court recently reopened the question of whether ILECs must offer unbundled access to shared transport, vacating the Eighth Circuit's decision approving the Commission's requirement that shared transport be unbundled. *See Ameritech v. FCC*, 1999 WL 116994 (U.S. June 1, 1999). Since the Commission adopted that requirement, the success of CLECs operating in every kind of market -- and serving every kind of customer -- using their own switches has confirmed that CLECs can compete without access to shared transport. These CLECs do not, as AT&T contends, have to "provision direct trunk groups" to every ILEC end-office and CLEC switch to achieve ubiquitous coverage of a local service area. AT&T Comments at 109. Instead, CLECs are able to provide ubiquitous service to their customers merely by *interconnecting* with ILEC access tandems -- a practice that is widely observed among CLECs today. *See* Murphy Reply Declaration at 21. CLECs that self-provide switching are therefore readily able -- and do -- secure the *functionality* provided by ILEC shared transport without access to unbundled ILEC switching. Thus, as the Ohio PUC states in its comments, "the provision of shared transport as a UNE would be rendered academic unless a proper demonstration is made to rebut" the case that switching should not be unbundled. Ohio PUC Comments at 11. No such case has been made by AT&T or by any other commenter.

Finally, the Big Three argue that customers served by loops provisioned through integrated digital loop carrier systems cannot be moved over to a CLEC switch through the hot-

cut procedure and therefore that, for these customers, "denial of access to unbundled switching may equate to a denial of an effective competitive choice of providers." AT&T Comments at 105; *see also* MCI WorldCom Comments at 55. But both the Commission and the Big Three have stated that it is "feasible to unbundle IDLC-delivered loops." *First Report and Order* ¶ 384. Indeed, both AT&T and MCI WorldCom have submitted to regulators papers that "describe several practical alternatives for unbundling [IDLC] loops." These alternatives, described in the Murphy Reply Declaration at 13-14, confirm that the Commission should not require ILECs to unbundle switching due to any supposed problems connecting IDLC-served customers with self-provided CLEC switches.

Ultimately, whatever additional costs CLECs face in employing alternatives to ILEC switching, the factual record demonstrates unequivocally that CLECs are competing effectively using their own switches. As many as 167 different CLECs have made the decision to place their own switches in markets that range from Dallas, Texas to Oxford Junction, Iowa. UNE Fact Report at I-1. PNR's survey of eight typical GTE markets confirmed that *every* facilities-based CLEC operating in those areas self-provides its own switching, and in these eight markets alone, CLECs have deployed 130 of their own switches. These sophisticated and highly capitalized companies would not be spending the resources required to deploy these switches if doing so placed them at a permanent cost disadvantage. The real-world evidence -- and section 251(d)(2)'s "impair" test -- therefore unequivocally counsels the Commission against requiring ILECs to provide unbundled access to switching.

B. A National Competitive Market Exists For Operator Services and Directory Assistance. Section 251(d)(2)'s "Impair" Test Therefore Precludes the Commission From Ordering ILECs To Provide Unbundled Access To These Elements.

As GTE documented in its Comments, numerous CLECs are currently self-providing OS and DA services or are purchasing these services from wholesale providers. Based on this factual record, even Sprint concedes that OS and DA most likely do not satisfy section 251(d)(2)'s "impair" test. Sprint Comments at 28. ALTS makes the same concession, omitting from its comments any discussion of the need to unbundle OS and DA services. ALTS Comments at ii. The same conclusion is expressly reached by the Ohio PUC, which states that "OS/DA is widely available from non-ILEC carriers such as alternative operator service providers, IXCs, and various CLECs." Ohio PUC Comments at 12. Likewise, the Ohio PUC concludes, based on its extensive review of the OS/DA alternatives in the Ohio marketplace, that "a majority of CLECs self-provision OS/DA." *Id.* at 12.

Again, despite this overwhelming real-world evidence, AT&T, MCI WorldCom and other commenters argue that the Commission should require ILECs to unbundle OS and DA. AT&T claims that CLECs require access to unbundled ILEC OS/DA because ILECs do not provide "customized routing of their local OS/DA traffic" from the ILEC switch to the CLEC platform. AT&T Comments at 126; *see also* MCI WorldCom Comments at 71, 73. Even if this were true -- which it is not -- it should have no impact on the Commission's deliberations. Customized routing is not required by CLECs that provide their own switching. Because switching does not

meet section 251(d)(2)'s "impair" standard, CLECs should have no need for customized OS and DA routing once the Commission promulgates its new rules.

Moreover, AT&T is simply wrong to assert that ILECs do not provide customized routing. GTE has implemented customized routing to support the delivery of CLEC traffic to third party OS/DA providers or to the CLEC's own OS/DA platform. Murphy Reply Declaration at 40. GTE also provides customized routing to CLECs who wish to use GTE's OS/DA services, with or without branding. *Id.* This commitment to customized routing is documented in numerous GTE interconnection agreements. As part of the interconnection negotiation process, GTE provides CLECs with a listing of offices that have been programmed to supply customized routing. *Id.* at 40-41. If a CLEC requests customized routing in an office that is not on the list, GTE will program the capability in that office. *Id.* at 41. CLECs therefore face no operational impediments to self-providing OS and DA services or to purchasing those services from wholesale providers.

Likewise, AT&T asserts that CLECs require access to ILEC emergency and DA databases because substitutes for these databases are inferior in quality. This inferiority stems, according to AT&T, from the fact that alternative providers update their databases less frequently. AT&T Comments at 130-31; *see also* MCI WorldCom Comments at 72. This argument is a red herring. The Commission's rules already guarantee CLECs access to ILEC databases. Section 251(b)(3) of the Act requires all LECs to provide to any requesting company "nondiscriminatory access to . . . operator services, directory assistance, and directory listings." Pursuant to this section, the FCC adopted Rule 217, which requires all LECs to "permit

competing providers to have access to and read the information in the LEC's directory assistance databases." 47 C.F.R. § 51.217. Likewise, Section 222(e) of the Communications Act requires all telecommunications carriers to provide their subscriber information "to any person upon request for the purpose of publishing directories in any format." There is therefore no need for the Commission to require ILECs to provide unbundled access to their DA databases.

Moreover, AT&T and MCI WorldCom are simply wrong to assert that the quality of wholesale DA database alternatives differs materially from ILEC DA databases. Wholesale DA providers routinely take advantage of their access to ILEC databases and build their own national DA databases by compiling information from numerous ILEC sources. InTeleServ, for example, operates with a DA database that has direct feeds from ILEC DA databases and "is supported with updates every 24 hours." Murphy Reply Declaration at 38. Even AT&T agrees -- in practice -- that alternative DA providers offer high-quality service. Excell Agent Services, which maintains an "extremely accurate database" by "constantly updating and verifying listings," was selected just last month by AT&T to supply its new national DA service. *Id.* at 39 (citation omitted).

Finally, MCI WorldCom asserts that, for "CLECs with very small market penetration, the unit costs of constructing their own OS/DA platforms and of transporting small levels of traffic back to these platforms" is prohibitively high. MCI WorldCom Comments at 74. While this assertion may be true, it is irrelevant to the Commission's decision about whether to require ILECs to unbundle OS and DA services. Small CLECs have a choice among numerous wholesale OS and DA providers if they want to avoid developing their own platforms, and these

providers price their services in packages of as few as 1,000 data listings. UNE Fact Report at IV-5. Given that 16 facilities-based CLECs are already competing in the eight GTE markets studied by PNR using self-provided or wholesale purchased OS and DA services, the Commission has no basis to conclude that CLECs are "impaired" in their ability to provide service without access to unbundled ILEC OS and DA.

C. Because Numerous CLECs Are Either Building Their Own Signaling Networks or Are Purchasing Signaling Service From Wholesalers, Section 251(d)(2)'s "Impair" Test Precludes Signaling From Being Subject To Unbundling.

CLECs seeking alternatives to ILEC-provided signaling likewise have ample alternatives available in the marketplace. Given the widespread availability of signaling hardware and software, in the eight GTE markets studied by PNR alone, 12 CLECs -- including Allegiance Telecom, AT&T, e.spire, Frontier Communications, GST, HTC Communications, and Lost Nation-Elwood Telephone -- have opted to build their own signaling networks. PNR Report at 23. CLECs seeking competitive alternatives to ILEC-provided signaling are also purchasing such services from numerous wholesale providers, including GTE Intelligent Network Services, SNET, Illuminet, BTI Telecom Services, TNSI Telecom Division Services, NaviNet, Revcom, and Targus Information Group. NECI Report at 48-49. These wholesale providers offer CLECs access to *every* signaling functionality provided by ILECs including AIN databases, require CLECs to establish only a single pair of connections to the provider's network, and offer service at prices accessible to even the smallest CLECs. *Id.* at 49.

The Big Three and other commenters offer little rebuttal to this market evidence. *First*, AT&T claims that when a "new entrant purchases the local switching element from the incumbent LEC, it must also obtain signaling from the incumbent LEC." AT&T Comments at 110; *see also* MCI WorldCom Comments at 59-60. True enough, but because switching does not itself meet section 251(d)(2)'s "impair" test, signaling cannot be bootstrapped along with it. Even if the Commission does conclude that switching must be unbundled in some markets, AT&T's assertion only justifies affording CLECs access to unbundled signaling when they purchase the two in combination. CLECs that self-provide switching have no need for unbundled ILEC signaling.

Second, MCI WorldCom asserts that "requiring entrants to bear the cost of deploying a fully redundant network architecture, including AIN databases and their application software, would constitute a significant barrier to market entry." MCI WorldCom Comments at 61. But this claim is belied by the fact that numerous small providers in just the eight GTE markets studied by PNR have found it economical to deploy their own signaling networks. Moreover, the availability of wholesale signaling service to the smallest CLECs makes MCI WorldCom's assertion irrelevant to the Commission's "impairment" analysis.

Finally, ALTS claims that, over "the past three years, no comparable alternatives have developed for ILEC signaling or call-related databases." ALTS Comments at 58. This assertion -- supported by no citation to actual market facts -- is simply false. Alternatives to ILEC signaling -- both in the form of self-provisioning and wholesale purchase -- are ubiquitous. Signaling therefore does not satisfy section 251(d)(2)'s "impair" standard.

III. CLECs ARE COMPETING SUCCESSFULLY IN WELL-DEFINED PRODUCT AND GEOGRAPHIC MARKETS USING SUBSTITUTES FOR UNBUNDLED ILEC TRANSPORT AND LOOPS. THE COMMISSION'S RULES MUST TAKE ACCOUNT OF THESE PREVAILING MARKET REALITIES.

A. GTE's Experience Confirms That CLECs Are Broadly Employing Substitutes For Unbundled ILEC Transport in Wire Centers Serving 15,000 or More Lines. Transport Therefore Should Not Be Subject To an Unbundling Obligation in These Markets.

In markets across the country, CLECs are deploying their own networks to self-provide, or provide to other carriers, interoffice transport capacity. Since 1996, the number of CLECs that have deployed fiber networks has grown from 29 to 60, and the number of metropolitan areas served by this fiber has increased from 130 to 289. UNE Fact Report at II-6. Within the top 50 MSAs, competitors have deployed over 30,000 miles of fiber, and in the MSAs ranked between 51 and 150, CLECs have deployed fiber in all but 15. *Id.* at II-6. Indeed, all but one of the 26 facilities-based CLECs operating in the eight urban, suburban, and rural GTE markets studied by PNR self-provide their own transport. PNR Report at 23. As the Ohio PUC concludes, "dedicated transport is available, in many geographic areas . . . , to CLECs outside [the] ILEC's network both through other non-incumbent carriers (CAPs, IXCs, and various CLECs) and through self-provisioning." Ohio PUC Comments at 10.

Consistent with their near-complete disregard for these market facts, the Big Three contend that in "the vast majority of cases in which competitors might need dedicated transport, the ILEC is the only source for that transport." MCI WorldCom Comments at 64.[24] Some of

[24] *See also* ALTS Comments at 51 ("The extent to which competitive interoffice transport facilities have been built is still negligible."); Covad Comments at 46 ("Covad has a choice of

the statements made by commenters cannot even be squared with their own reports made to the marketplace and the Securities Exchange Commission. Allegiance Telecom, for example, states in its comments that transport is "obviously essential to a CLEC's ability to offer service," and that in a "reasonably typical" market it must "rely heavily on access to . . . unbundled transport network elements in order to offer competitive local exchange service." Allegiance Comments at 18. Nevertheless, in its November 1998 10Q filing to the SEC, Allegiance told investors that "the company believes that in most of the markets it plans to enter there are multiple carriers in addition to the ILEC from which it could lease trunking capacity; typically at lower prices than the ILEC price." PNR Report at 24 (citation omitted). The two statements made by Allegiance are flatly inconsistent. The Commission should be far more trusting in the accuracy of statements made to the SEC given that a misleading statement in that arena risks criminal charges.

Despite the widespread use and availability of these transport alternatives in many markets, the Big Three contend that CLECs employing these substitutes face a number of disadvantages. *First*, AT&T laments the fact that there is no "assurance" that wholesale providers "will continue leasing capacity to other carriers, especially as demand for their own local services increases." AT&T Comments at 122-23. This assertion is nothing more than an indictment of competition itself and the uncertainty created by the possibility that firms will alter their business strategies in a free and open market. Taken to its logical extreme, AT&T's

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multiple fiber CLECs for interoffice transport in less than 7% of its point-to-point interoffice links.").

concern justifies bringing the "assurance" of regulation to all competitive markets -- a result the Act expressly forbids. Moreover, AT&T's claim ignores the fact that numerous wholesale providers market themselves exclusively as "carriers' carriers" -- offering no retail services of their own to compete for transport capacity. Moreover, wholesale providers have no incentive to cease offering transport capacity to CLEC customers. The majority of these providers offer service over SONET rings whose capacity can readily be increased by adding electronics or employing wave division multiplexing. NECI Report at 25. AT&T's own affiants concede as much, agreeing that once "fiber has been deployed, adding substantial capacity may be achieved through a simple change out of electronics."[25] Because wholesale networks are scalable, there is no reason for the Commission to fear the supply of transport capacity will dry up.

Second, AT&T argues that self-provisioning transport involves a number of "substantial costs," including: "(i) negotiating and litigating right-of-way agreements with local municipalities and other parties; (ii) paying the fees imposed by such agreements; (iii) leasing and preparing collocation space; and (iv) acquiring and deploying dedicated transport equipment." AT&T Comments at 111-12. The question of collocation was addressed above, and the ubiquity of CLEC fiber networks demonstrates unequivocally that the cost of "acquiring and deploying dedicated transport equipment" does not in any way "impair" CLECs from building ubiquitous transport networks. Nor have any difficulties negotiating right-of-way agreements kept CLECs from deploying 30,000 miles of fiber in the top 50 MSAs alone. UNE

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[25] Affidavit of William S. Beans, Jr., Meredith R. Harris, and M. Joseph Stith on Behalf of AT&T Corp., at 5 n.3 (attached as Exhibit A to AT&T's Comments).

Fact Report at II-6. Indeed, AT&T itself has stated that claims of excessive right-of-way costs are "ridiculous and totally unsupported." Murphy Reply Declaration at 32-33 (citation omitted). To the extent that CLECs do face costs associated with "negotiating and litigating" municipal right-of-way agreements, those costs fall on ILECs as well. A number of municipalities have attempted to require *all* carriers to pay excessive fees in exchange for access to rights-of-way. In Dallas, for example, the city passed ordinances requiring *both GTE and AT&T* to pay four percent of their gross receipts collected on all services provided in the city -- whether those services used the rights-of-way or not -- in return for access to the streets.[26] But these incidents of municipal overreaching do not justify requiring ILECs to provide unbundled access to interoffice transport. Rather, the Commission should address the problem head-on by confirming that the Act limits the ability of municipal governments to charge excessive fees and impose onerous franchise requirements on *all* carriers. Numerous courts have already adopted this approach -- invalidating overbroad municipal regulations and fees by enforcing section 253's limits on municipal authority.[27]

Third, AT&T claims that dedicated transport made available through ILEC special access tariffs is not a substitute for unbundled ILEC transport because an ILEC cannot avoid

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[26] *See AT&T Communications of the Southwest, Inc. v. City of Dallas*, 8 F. Supp.2d 582, 586 (N.D. Tex. 1998).

[27] *See, e.g., Bell Atlantic-Maryland, Inc. v. Prince George's County,* No. CCB-98-4187, Memorandum, at 21-22 (D. Md. May 24, 1999); *AT&T Communications of the Southwest, Inc. v. City of Dallas,* No. 3:98-CV-0003-R, Judgment, at 1-2 (N.D. Tex. May 17, 1999); *AT&T Communications of the Southwest, Inc. v. City of Austin,* 975 F. Supp. 928, 938 (W.D. Tex. 1997).

"unbundling obligations by offering unbundled elements to end users as retail services." AT&T Comments at 124. But it would make no sense for the Commission to exclude consideration of substitutes to unbundled ILEC elements like special access when those substitutes are widely used in the marketplace. In such circumstances, there is no basis for AT&T's concern (echoed by the Commission in the *First Report and Order*) that ILECs "could completely avoid section 251(c)(3)'s unbundling obligations by offering unbundled elements" at tariffed rates. *First Report and Order* ¶ 287. The Commission should not consider special access a viable substitute for unbundled ILEC transport merely because it is offered, but because it is offered *on terms that allow CLECs to compete.*[28] So long as the Commission applies the same "impair" test to alternatives available from the ILEC as from outside sources, there is no risk that ILECs could circumvent their statutory obligations.

AT&T also claims that ILEC special access is not an effective substitute because prices are "not cost-based and are not subject to competitive pricing discipline." AT&T Comments at 124; *see also* Covad Comments at 47-48 (arguing that special access prices exceed TELRIC prices for transport). But the marketplace reality is just the opposite. ILECs and CLECs generally share in the cost of interconnection facilities that are provisioned for the mutual exchange of local, EAS, intraLATA toll, and jointly provided IXC traffic. For the mutual exchange of local, EAS, and intraLATA toll traffic, GTE reduces the charges for special access

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[28] *See, e.g., City of Chanute v. Williams Natural Gas Co.*, 955 F.2d 641, 647 (10th Cir. 1992) (court must consider alternative products supplied by the owner of a claimed essential facility when determining whether competitors have viable alternatives to that facility), *overruled on other grounds, Systemcase, Inc. v. Wang Laboratories, Inc.*, 117 F.3d 1137 (10th Cir. 1997).

facilities ordered by CLECs in a number of ways, often discounting the special access price by 50 percent. Murphy Reply Declaration at 28. In addition to these substantial discounts, many CLECs also qualify for additional price reductions based on traffic volume or the terms of their contracts. *Id.* Moreover, larger CLECs such as AT&T also qualify for implicit volume discounts due to their ability to support higher bandwidth (DS3 and SONET) services because the per unit price of SONET services is typically much lower than the DS1 tariffed rate. *Id.* GTE also allows carriers to purchase large bandwidth pipes (*e.g.*, OC-48 SONET service) and manage the assignment of multiple services (switched access, special access, interconnection trunks, UNEs) that will ride the SONET network to their POP. *Id.* Thus, if a CLEC has sufficient access demand to support the lease of an OC-48 access facility, it can dedicate vacant channels to new access or other types of services. *Id.* CLECs with spare capacity physically can and in practice do provision interconnection trunk groups at no additional cost.

Thus, there are at least five means by which CLECs can obtain dedicated transport capacity. In addition to self-provisioning, third-party alternatives, and ordinary purchases out of ILEC access tariffs, CLECs also can obtain dedicated transport from expanded interconnection arrangements where ILECs share the facilities cost (based on facilities used) and from volume or term discounts applied to the purchase of DS3 and SONET services.

Finally, MCI WorldCom argues that there "is no single threshold above which dedicated transport is cost-effective." This *assertion* cannot be squared with the econometric study conducted by GTE to identify the wire center characteristics that motivate a CLEC's decision to collocate. *See* Declaration of Dr. R. Dean Foreman at 2-4 (filed as Appendix C to GTE's

Comments). Dr. Foreman's analysis estimates the impact of numerous factors on the incidence of CLEC collocation, including access line and interoffice trunk density, wire center size, customer mix, the extent to which an area is urbanized, and ILEC network topology. *Id.* at 2-4. Based on the results of a logistic regression, Dr. Foreman concludes that "collocation is nearly 18 to 20 times more likely to be observed among wire centers of 15,000 or more lines than in any wire center of smaller size." *Id.* at 7. Because collocation has an extremely strong correlation with the presence of transport alternatives -- as confirmed by the fact that only one CLEC has requested unbundled transport in the 141 GTE wire centers with operational collocation -- GTE's experience establishes a clear threshold for determining where transport alternatives could economically be used by CLECs. *Id.* at 7. In these markets, section 251(d)(2)'s "impair" test precludes the Commission from requiring ILECs to provide unbundled access to transport.

B. CLECs Are Self-Providing, or Purchasing From Wholesalers, Myriad ILEC-Loop Alternatives To Serve Large Business Customers and Multiple Dwelling Units. Section 251(d)(2)'s "Impair" Test Therefore Precludes These Loops From Being Unbundled.

Notwithstanding the Big Three's contention that local "loops are the quintessential bottleneck network elements,"[29] numerous CLECs are self-providing or purchasing from wholesalers local loops that serve businesses and MDUs with more than 20 lines. Indeed, in the

[29] AT&T Comments at 59; *see also* MCI WorldCom Comments at 43 (for "the overwhelming majority of customers, the underlying economies of scale of the loop render it a natural monopoly"); Sprint Comments at 29 ("There is simply no ubiquitous alternative source of loop plant today.").

three years since the Act was passed, CLECs have attracted approximately *2.5 million* facilities-based lines to their new networks in GTE and RBOC service territories. As Chairman Kennard stated to the Senate Commerce Committee, "almost a million CLEC access lines were installed" in the first quarter of 1999 *alone*.[30]

Nevertheless, AT&T and others argue that the Commission should require unbundled access to all loops because self-provision is "prohibitively expensive" and "is very slow." AT&T Comments at 63.[31] Delays typically stem, according to AT&T, from the need for CLECs to negotiate right-of-way agreements with both municipalities and utility companies and from the time typically required to deploy new facilities. AT&T Comments at 63-66. These arguments are little more than repeats of AT&T's claims about why CLECs could not self-provide transport. Accordingly, they are dealt with above.

AT&T likewise claims that fixed wireless is not an effective loop substitute because it "constitutes a minuscule portion of total traffic volumes in the United States" and can take as long as two years to deploy in new markets. AT&T Comments at 69-70. This claim is belied by AT&T's acquisition of TCG, through which it secured 38-Ghz licenses in 213 geographic

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[30] Oral Testimony of William E. Kennard Before the Senate Commerce Committee, at 2 (May 26, 1999).

[31] Simultaneous with its claim that CLECs "would clearly be impaired" without access to unbundled ILEC loops, Qwest has, in concert with venture capital firms, just sunk one quarter of a billion dollars into a loop alternative and committed to rapid expansion plans in 40 of the top 50 metropolitan markets. *Compare* Qwest Comments at 59 *with* Stephanie Gates, *Qwest and VCs buy into Advanced Radio Telecom*, Redherring.com, June 3, 1999. Qwest's viability therefore does not, as it suggests, hang in the balance on whether CLECs are afforded unbundled access to ILEC loops in major metropolitan areas.

regions and 95 out of the 100 largest markets. UNE Fact Report at II-17. These licenses were touted as allowing AT&T to serve "customers that cannot be served economically with fiber optics." *Id.* at II-17. Moreover, CLECs that predominantly offer service over wireless local loops are experiencing explosive revenue growth and high rates of customer acquisition. Teligent, for example, already serves 28 markets that comprise more than 464 cities and towns with a combined population exceeding 83 million, and is planning to offer service in 12 more markets just in the remainder of 1999. PNR Report at 85. As confirmed by the fact that Teligent, and its sister CLEC WinStar, have a combined market capitalization in excess of $3 billion, CLECs supplying service over wireless local loops are viable -- indeed formidable -- competitors in the local marketplace. As WinStar concludes in its comments, "the fixed wireless local loop (such as is being deployed by WinStar, Teligent, OpTel, ART, NextLink, and various successful LMDS bidders) is capable at once of breaking the last mile bottleneck" and bringing local service "to a greatly expanded universe" of small business and residential customers. WinStar Comments at 4. Indeed, another CLEC, Triton Network Systems, is advertising that an investment in a fixed wireless network connecting 87 buildings will generate a 25 percent rate of return over 10 years.[32]

Finally, AT&T asserts that the Commission should require ILECs to build loops on demand by CLECs "to serve customers to whom the incumbent has not yet extended its facilities." AT&T Comments at 82. Thus, according to AT&T, if a CLEC customer located in

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[32] Triton Network Systems Advertisement, USA Today, June 8, 1999, at 8B.